# Project Fact Sheet

## *Dynamic Characterization of Process Power Quality for the California Food Processing Industry*

### GOALS

- To assist the California Food Processing Industry in determining the vulnerability of their automated food processing system to power quality disturbances.
- To provide recommended improvements to the automated process used by the industry that will mitigate or eliminate potential power quality sensitivities and provide the industry a more reliable production process.
- To provide the California Food Processing Industry tools and information to better understand the impact of electrical power quality on their productivity and make the California Food Process Industry more competitive in the global marketplace.
- To provide the California Food Processing industry a recommended methodology to implement procedures that will make the entire industry less sensitive to power quality disturbances.

### PROJECT DESCRIPTION

This program is assessing the vulnerability of California's Food Processing Industry equipment to disturbances in the electrical power delivery system. In this case, the Del Monte Plant in Modesto, California, was used as a representative industrial site. In-line-monitoring systems were installed to collect real time performance data from plant equipment while the food production was in-process. Using this monitoring data, plant process equipment schematics and historical plant process performance data, overall process sensitivities to different power quality disturbances were defined. Equipment sensitivity data was compared with other industrial process equipment to determine the level of sensitivity to electrical disturbances and recommended procedures to make the equipment less sensitive. Recommended actions were developed for both the Del Monte Plant and the entire Food Processing Industry.

**Del Monte Processing Facility**

## BENEFITS TO CALIFORNIA

According to the California League of Food Processors, the California Food Processing Industry grows, produces, packs and ships:

- 45% of the world supply of processed tomato products
- 100% of the US supply of canned peaches and fruit cocktail
- 100% of the US supply of black ripe olives.

The California Food Processing Industry is undergoing a transition to a highly automated production process and electric energy is becoming one of the most critical elements of successful plant operations. Recognizing the significant change in their production process, industry representatives requested an assessment of its vulnerability to power quality disturbances. The results of this efforts provides the California Food Processing Industry the baseline data necessary to make their production process more robust and capable of withstanding a wider range of electrical power disturbances without suffering production losses. The results are higher productivity and improved global competitiveness.

## FUNDING AMOUNT

**California Energy Commission: $20,300**
**Match Funding: $20,300**

## OUTCOMES

- The recent California Energy Crisis resulted in substantial impacts on California Industries. The majority of the Food Processing Industry companies are global enterprises capable of shifting their operations from one plant to another when the conditions warrant. Keeping these industries in California is critical to the overall economy of California. Efforts like these make the California Food Processing Industry more competitive and sustainable in California.
- The methodology developed at the Del Monte Plant for this program is directly transferable to other California Food Processing operations.
- The California Food Processing Industry is already implementing the findings from this effort at other California industrial locations.
- The results of this effort are programmed for use by other PIER funded efforts for the Food Processing and other California Industries.

## PROJECT STATUS

This project is ongoing. The data collection and plant level analysis is complete. The final recommendations are being developed.

## FOR MORE INFORMATION


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